

§ 193.2601

be kept for a period of not less than five years.

[Amdt. 193-17, 65 FR 10960, Mar. 1, 2000, as amended by Amdt. 193-18, 69 FR 11337, Mar. 10, 2004]

Subpart G—Maintenance

SOURCE: Amdt. 193-2, 45 FR 70407, Oct. 23, 1980, unless otherwise noted.

§ 193.2601 Scope.

This subpart prescribes requirements for maintaining components at LNG plants.

§ 193.2603 General.

(a) Each component in service, including its support system, must be maintained in a condition that is compatible with its operational or safety purpose by repair, replacement, or other means.

(b) An operator may not place, return, or continue in service any component which is not maintained in accordance with this subpart.

(c) Each component taken out of service must be identified in the records kept under § 193.2639.

(d) If a safety device is taken out of service for maintenance, the component being served by the device must be taken out of service unless the same safety function is provided by an alternate means.

(e) If the inadvertent operation of a component taken out of service could cause a hazardous condition, that component must have a tag attached to the controls bearing the words “do not operate” or words of comparable meaning.

§ 193.2605 Maintenance procedures.

(a) Each operator shall determine and perform, consistent with generally accepted engineering practice, the periodic inspections or tests needed to meet the applicable requirements of this subpart and to verify that components meet the maintenance standards prescribed by this subpart.

(b) Each operator shall follow one or more manuals of written procedures for the maintenance of each component, including any required corrosion control. The procedures must include:

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(1) The details of the inspections or tests determined under paragraph (a) of this section and their frequency of performance; and

(2) A description of other actions necessary to maintain the LNG plant according to the requirements of this subpart.

(c) Each operator shall include in the manual required by paragraph (b) of this section instructions enabling personnel who perform operation and maintenance activities to recognize conditions that potentially may be safety-related conditions that are subject to the reporting requirements of § 191.23 of this subchapter.

[Amdt. 193-2, 45 FR 70407, Oct. 23, 1980, as amended by Amdt. 193-5, 53 FR 24950, July 1, 1988; 53 FR 26560, July 13, 1988; Amdt. 193-18, 69 FR 11337, Mar. 10, 2004]

§ 193.2607 Foreign material.

(a) The presence of foreign material, contaminants, or ice shall be avoided or controlled to maintain the operational safety of each component.

(b) LNG plant grounds must be free from rubbish, debris, and other material which present a fire hazard. Grass areas on the LNG plant grounds must be maintained in a manner that does not present a fire hazard.

§ 193.2609 Support systems.

Each support system or foundation of each component must be inspected for any detrimental change that could impair support.

§ 193.2611 Fire protection.

(a) Maintenance activities on fire control equipment must be scheduled so that a minimum of equipment is taken out of service at any one time and is returned to service in a reasonable period of time.

(b) Access routes for movement of fire control equipment within each LNG plant must be maintained to reasonably provide for use in all weather conditions.

§ 193.2613 Auxiliary power sources.

Each auxiliary power source must be tested monthly to check its operational capability and tested annually for capacity. The capacity test must take into account the power needed to

start up and simultaneously operate equipment that would have to be served by that power source in an emergency.

§ 193.2615 Isolating and purging.

(a) Before personnel begin maintenance activities on components handling flammable fluids which are isolated for maintenance, the component must be purged in accordance with a procedure which meets the requirements of AGA "Purging Principles and Practices," unless the maintenance procedures under § 193.2605 provide that the activity can be safely performed without purging.

(b) If the component or maintenance activity provides an ignition source, a technique in addition to isolation valves (such as removing spool pieces or valves and blank flanging the piping, or double block and bleed valving) must be used to ensure that the work area is free of flammable fluids.

§ 193.2617 Repairs.

(a) Repair work on components must be performed and tested in a manner which:

(1) As far as practicable, complies with the applicable requirements of Subpart D of this part; and

(2) Assures the integrity and operational safety of the component being repaired.

(b) For repairs made while a component is operating, each operator shall include in the maintenance procedures under § 193.2605 appropriate precautions to maintain the safety of personnel and property during repair activities.

§ 193.2619 Control systems.

(a) Each control system must be properly adjusted to operate within design limits.

(b) If a control system is out of service for 30 days or more, it must be inspected and tested for operational capability before returning it to service.

(c) Control systems in service, but not normally in operation, such as relief valves and automatic shutdown devices, and control systems for internal shutoff valves for bottom penetration tanks must be inspected and tested once each calendar year, not exceeding

15 months, with the following exceptions:

(1) Control systems used seasonally, such as for liquefaction or vaporization, must be inspected and tested before use each season.

(2) Control systems that are intended for fire protection must be inspected and tested at regular intervals not to exceed 6 months.

(d) Control systems that are normally in operation, such as required by a base load system, must be inspected and tested once each calendar year but with intervals not exceeding 15 months.

(e) Relief valves must be inspected and tested for verification of the valve seat lifting pressure and reseating.

[Amdt. 193-2, 45 FR 70407, Oct. 23, 1980, as amended by Amdt. 193-17, 65 FR 10960, Mar. 1, 2000]

§ 193.2621 Testing transfer hoses.

Hoses used in LNG or flammable refrigerant transfer systems must be:

(a) Tested once each calendar year, but with intervals not exceeding 15 months, to the maximum pump pressure or relief valve setting; and

(b) Visually inspected for damage or defects before each use.

§ 193.2623 Inspecting LNG storage tanks.

Each LNG storage tank must be inspected or tested to verify that each of the following conditions does not impair the structural integrity or safety of the tank:

(a) Foundation and tank movement during normal operation and after a major meteorological or geophysical disturbance.

(b) Inner tank leakage.

(c) Effectiveness of insulation.

(d) Frost heave.

[Amdt. 193-2, 45 FR 70407, Oct. 23, 1980, as amended at 47 FR 32720, July 29, 1982]

§ 193.2625 Corrosion protection.

(a) Each operator shall determine which metallic components could, unless corrosion is controlled, have their integrity or reliability adversely affected by external, internal, or atmospheric corrosion during their intended service life.